Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy

**DATE:** February 2010

#### APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

# R-1 ITEM NOMENCLATURE

PE 0207163N: *AMRAAM* 

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	6.902	3.589	2.633	0.000	2.633	2.984	2.994	3.063	3.126	Continuing	Continuing
0981: <i>AMRAAM</i>	6.902	3.589	2.633	0.000	2.633	2.984	2.994	3.063	3.126	Continuing	Continuing

## A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

### **B. Program Change Summary (\$ in Millions)**

	FY 2009	FY 2010	<b>FY 2011 Base</b>	FY 2011 OCO	FY 2011 Total
Previous President's Budget	8.509	3.604	0.000	0.000	0.000
Current President's Budget	6.902	3.589	2.633	0.000	2.633
Total Adjustments	-1.607	-0.015	2.633	0.000	2.633
<ul> <li>Congressional General Reductions</li> </ul>		0.000			
<ul> <li>Congressional Directed Reductions</li> </ul>		0.000			
<ul> <li>Congressional Rescissions</li> </ul>	0.000	0.000			
<ul> <li>Congressional Adds</li> </ul>		0.000			
<ul> <li>Congressional Directed Transfers</li> </ul>		0.000			
Reprogrammings	-1.350	0.000			
<ul> <li>SBIR/STTR Transfer</li> </ul>	-0.257	0.000			
<ul> <li>Program Adjustments</li> </ul>	0.000	0.000	2.633	0.000	2.633
Rate/Misc Adjustments	0.000	-0.015	0.000	0.000	0.000

# **Change Summary Explanation**

Technical: Not Applicable

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy		<b>DATE</b> : February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207163N: AMRAAM	
Schedule: Delays integrating developmental hardware integrating and Manufacturing Development (EMD) to Schedule:		
FY2010 missile contract award has been moved from Feb	oruary to March per executive service (USAF) sche	dule decision.
Phase 4 SIP/SWUP start delayed to 4th quarter FY2009 of	due to schedule adjustments.	
MRM Concept Development start delayed to 4th quarter F	Y2009 due to revisions in task definition.	
FY11 from previous President's Budget is shown as zero	because no FY11-15 data was presented in Presid	ent's Budget 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT

1319: Research, Development, Test & Evaluation, Navy PE 0207163N: AMRAAM 0981: AMRAAM

BA 7: Operational Systems Development

Bit i. Operational Cyclemic Bevelop	CT. Operational Systems Development										
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
0981: <i>AMRAAM</i>	6.902	3.589	2.633	0.000	2.633	2.984	2.994	3.063	3.126	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

#### A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continued aircraft integration	0.704	1.292	0.873	0.000	0.873
Continue Aircraft integration activities and test and evaluation for Navy unique requirements.					
FY 2009 Accomplishments:  Continued aircraft integration activities and test and evaluation for Navy unique requirements.					
FY 2010 Plans: Continue aircraft integration activities and test and evaluation for Navy unique requirements.					
FY 2011 Base Plans: Continue aircraft integration activities and test and evaluation for Navy unique requirements.					
Continued to identify potential improvements	2.507	0.850	0.400	0.000	0.400

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: Feb	ruary 2010	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207163N: AMRAAM		PROJECT 0981: AMR	AAM		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continue engineering support of AMRAAM, including investigation a offer potential improvements in AMRAAM lethality/performance and systems.						
FY 2009 Accomplishments:  Continued engineering support of AMRAAM, including investigation offer potential improvements in AMRAAM lethality/performance and systems. Conducted Operational Flight Program (OFP) efforts.						
FY 2010 Plans: Continue engineering support of AMRAAM, including investigation offer potential improvements in AMRAAM lethality/performance an systems. Conducted Operational Flight Program (OFP) efforts.	•					
FY 2011 Base Plans: Continue engineering support of AMRAAM, including investigation offer potential improvements in AMRAAM lethality/performance and systems. Conducted Operational Flight Program (OFP) efforts.						
Continued Phase 4 EMD efforts		3.691	1.447	1.360	0.000	1.360
System engineering and test activities in AMRAAM Phase 4 program Manufacturing (POM) testing, final testing of Phase 4 software, aircr Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Co aircraft integration activities for System Improvement Program (SIP compatibility requirements and Navy aircraft integration/compatibility Medium Range Missile (MRM) Concept Development to fund the initechnological advancements to combat evolving threats.	raft integration/aircraft Operational ontinue system engineering/ ) with emphasis on Navy unique or requirements. Commence					

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R-1 Line Item #188 Page 4 of 12

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY
1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

DATE: February 2010

R-1 ITEM NOMENCLATURE
PE 0207163N: AMRAAM

0981: AMRAAM

# B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments:  Continued system engineering and test activities in AMRAAM Phase 4 program which include conducting Proof of Manufacturing (POM) testing, final testing of Phase 4 software, aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Began system engineering/aircraft integration activities for System Improvement Program (SIP) with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. Commenced Medium Range Missile (MRM) Concept Development to fund the initial exploratory efforts for future technological advancements to combat evolving threats.					
FY 2010 Plans: Continue system engineering and test activities in AMRAAM Phase 4 program which includes aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for System Improvement Program (SIP) with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.					
FY 2011 Base Plans: Continue system engineering and test activities in AMRAAM Phase 4 program which includes aircraft integration/aircraft Operational Flight Program (OFP) efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for System Improvement Program (SIP) with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.					
Accomplishments/Planned Programs Subtotals	6.902	3.589	2.633	0.000	2.63

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

#### APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207163N: AMRAAM

PROJECT

0981: *AMRAAM* 

### C. Other Program Funding Summary (\$ in Millions)

				FY 2011	FY 2011	FY 2011					Cost To	
	<u>Line Item</u>	FY 2009	FY 2010	<u>Base</u>	OCO	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	<b>Complete</b>	Total Cost
•	WPN/ 220600: AMRAAM	88.525	138.079	155.553	0.000	155.553	191.018	230.197	238.201	262.368	1,807.545	4,605.190
•	MPAF/3479: AMRAAM	202.741	272.714	355.358	0.000	355.358	311.456	473.683	458.075	462.619	4,556.857	13,986.103
•	RDTE,AF/673777: AMRAAM	48.633	49.971	63.252	0.000	63.252	61.322	58.078	77.145	58.898	0.000	837.399

# **D. Acquisition Strategy**

Annualized AMRAAM production procurements will continue across the FYDP with periodic pre-planned product improvements and Value Engineering Change Proposals (VECP). The 328th Armament Systems Group (328 ARSG) will revisit instituting a Long Term Pricing Agreement (LTPA) upon Raytheon's ability to consistently achieve monthly deliveries of 30 - 35 AIM120Ds.

### **E. Performance Metrics**

The AIM-120 AMRAAM program is meeting cost, schedule, performance, funding and life cycle sustainment in accordance with the Acquisition Program Baseline. Contractor is meeting the production schedule.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207163N: AMRAAM

**PROJECT** 0981: *AMRAAM* 

Product Development (\$ in Millions)

				FY 2	2010	FY 2 Ba		FY 20 OC		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development (EGLIN))	SS/CPAF	RAYTHEON COMPANY Tucson AZ	42.453	0.789	Jan 2010	0.701	Jan 2011	0.000		0.701	4.050	47.993	47.993
Award Fees (EGLIN)	SS/CPAF	Various Various	5.990	0.139	Jan 2010	0.124	Jan 2011	0.000		0.124	0.715	6.968	6.968
Primary Hdw Development (DAHLGREN)	WR	NSWC DAHLGREN D C XDM1 Dahlgren VA	0.067	0.025	Nov 2009	0.025	Nov 2010	0.000		0.025	0.107	0.224	Continuing
Primary Hdw Development	Various/ Various	Various Various	2.150	0.000		0.000		0.000		0.000	0.000	2.150	Continuing
Primary Hdw Development (NAWCAD)	WR	NAWCAD Patuxent River MD	0.562	0.207	Nov 2009	0.221	Nov 2010	0.000		0.221	0.866	1.856	Continuing
Primary Hdw Development (NAWCWD)	WR	NAWCWD China LakeCA	0.540	0.087	Nov 2009	0.089	Nov 2010	0.000		0.089	0.361	1.077	Continuing
Prior Years Hardware Dev	Various/ Various	Various Various	20.520	0.000		0.000		0.000		0.000	0.000	20.520	Continuing
		Subtotal	72.282	1.247		1.160		0.000		1.160	6.099	80.788	54.961

#### Remarks

Remarks: Percentage of award fees actually awarded in past award fee periods is 15%

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207163N: AMRAAM

PROJECT

0981: AMRAAM

# **Support (\$ in Millions)**

				FY 2	2010	FY 2 Ba	2011 se	FY 2011 OCO	1	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support (BOEING)	SS/CPAF	MCDONNELL DOUGLAS CORP St Louis MO	5.654	0.400	Jan 2010	0.000		0.000		0.000	0.000	6.054	6.054
Development Support (NSMA)	WR	NAVY SYST MGT ACT Arlington VA	2.597	0.250	Dec 2009	0.200	Dec 2010	0.000		0.200	0.842	3.889	Continuing
Studies & Analyses - JHU/APL	SS/FFP	NAVSEASYSCOM Washington DC	0.860	0.200	Jan 2010	0.200	Jan 2011	0.000		0.200	0.846	2.106	2.106
Prior Years Dev/Acft Integ	Various/ Various	Various Various	11.366	0.000		0.000		0.000		0.000	0.000	11.366	Continuing
		Subtotal	20.477	0.850		0.400		0.000		0.400	1.688	23.415	8.160

#### Remarks

# **Test and Evaluation (\$ in Millions)**

				FY 2	2010	FY 2 Ba	-	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Test & Eval (NAWCWD)	WR	NAWCWD China LakeCA	5.806	1.292	Nov 2009	0.873	Nov 2010	0.000		0.873	3.574	11.545	Continuing
		Subtotal	5.806	1.292		0.873		0.000		0.873	3.574	11.545	

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**Remarks** 

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**PROJECT** 

1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development

PE 0207163N: *AMRAAM* 

0981: AMRAAM

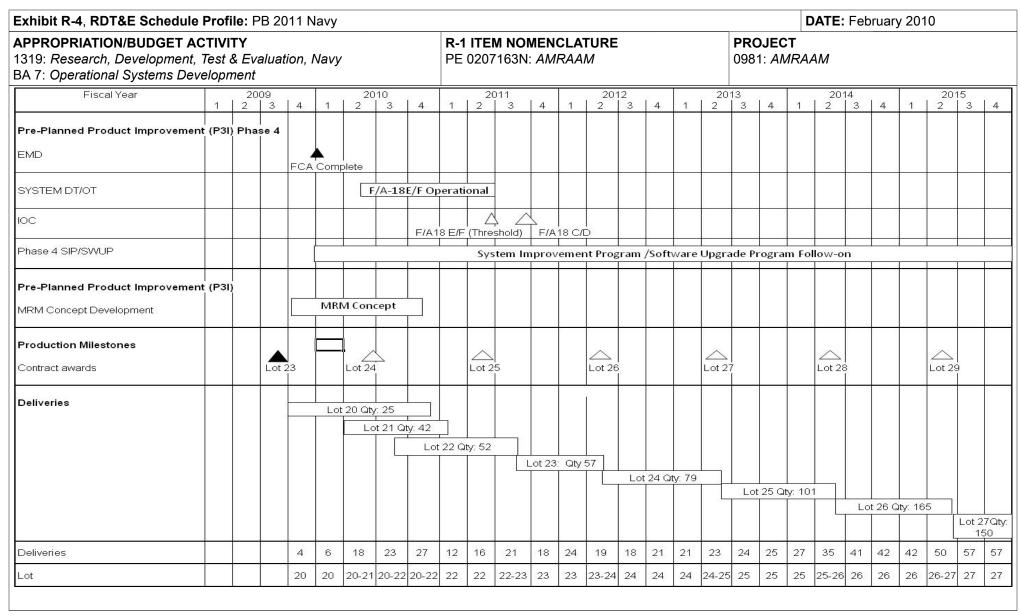
**Management Services (\$ in Millions)** 

_	•	•											
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	MIPR	PMA-259 Eglin AFB FL	2.369	0.200	Oct 2009	0.200	Oct 2010	0.000		0.200	0.844	3.613	Continuing
Prior Years Management	Various/ Various	Various Various	4.002	0.000		0.000		0.000		0.000	0.000	4.002	Continuing
		Subtotal	6.371	0.200		0.200		0.000		0.200	0.844	7.615	

#### **Remarks**

	Total Prior Years Cost	FY:	2010	FY 2 Ba	2011 ase	FY 2	-	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	104.936	3.589		2.633		0.000		2.633	12.205	123.363	63.121

### **Remarks**



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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207163N: AMRAAM

**PROJECT** 

0981: *AMRAAM* 

## Schedule Details

	Sta	End		
Event	Quarter	Year	Quarter	Year
EMD Completion Phase 4	4	2009	4	2009
Phase 4 SIP/SWUP Start (P3I Follow-0n)	4	2009	4	2015
System DT/OT (F/A-18 E/F)	2	2010	2	2011
IOC F/A18 E/F (Threshold)	2	2011	2	2011
IOC F/A18 C/D	3	2011	3	2011
Medium Range Missile Concept Development	4	2009	4	2010
Production Lot 23 Contract Award	3	2009	3	2009
Production Lot 24 Contract Award	2	2010	2	2010
Production Lot 25 Contract Award	2	2011	2	2011
Production Lot 26 Contract Award	2	2012	2	2012
Production Lot 27 Contract Award	2	2013	2	2013
Production Lot 28 Contract Award	2	2014	2	2014
Production Lot 29 Contract Award	2	2015	2	2015
Production Deliveries - Lot 20	4	2009	4	2010
Production Deliveries - Lot 21	2	2010	4	2010
Production Deliveries - Lot 22	3	2010	3	2011
Production Deliveries - Lot 23	3	2011	2	2012
Production Deliveries - Lot 24	2	2012	2	2013

# **UNCLASSIFIED**

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207163N: *AMRAAM* 

**PROJECT** 

0981: *AMRAAM* 

	Start			End		
Event	Quarter	Year	Quarter	Year		
Production Deliveries - Lot 25	2	2013	2	2014		
Production Deliveries - Lot 26	2	2014	2	2015		
Production Deliveries - Lot 27	2	2015	4	2015		